Modeling autism spectrum disorders with human neurons.

Journal: Brain Res

Publication Year: 2016

Authors: Patricia C B Beltrao-Braga, Alysson R Muotri

PubMed link: 26854137

Funding Grants: A drug-screening platform for autism spectrum disorders using human astrocytes

Public Summary:
In this critical review, we compile the literature and data available regarding the use of iPSC to model autism spectrum disorders.

Scientific Abstract:
Autism spectrum disorder (ASD) is a group of neurodevelopmental disorders characterized by impaired social communication and interactions and by restricted and repetitive behaviors. Although ASD is suspected to have a heritable or sporadic genetic basis, its underlying etiology and pathogenesis are not well understood. Therefore, viable human neurons and glial cells produced using induced pluripotent stem cells (iPSC) to reprogram cells from individuals affected with ASD provide an unprecedented opportunity to elucidate the pathophysiology of these disorders, providing novel insights regarding ASD and a potential platform to develop and test therapeutic compounds. Herein, we discuss the state of art with regards to ASD modeling, including limitations of this technology, as well as potential future directions. This article is part of a Special Issue entitled SI: Exploiting human neurons.